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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/802,114

03/15/2004

Ephrem Wu

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LSI CORPORATION
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EXAMINER

OVEISSI, DAVID M

ART UNIT

PAPER NUMBER

2609

MAIL DATE

DELIVERY MODE

08/07/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/802,114

Applicant(s)

WU, EPHREM

Examiner

David Oveissi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 14-19 and 27 is/are rejected.
- 7) ☒ Claim(s) 7-13 and 20-26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

a. A patent may not be obtained though the invention is not identically disclosed or described as set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-6, 14-19, and 27** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Huch et al. (US 6,421,770 B1)** in view of **Upp (4,998,242)**.

Note: The phrase “**capable of**” recited in claim 1 lines 5 and 13; in claim 14 lines 9 and 17; in claim 27 lines 18 and 25 are not positively recited claim limitations.

Therefore, the limitations after the phrase are not considered the claims limitations. It is suggested applicant to remove the phrase.

For claims 1, 14, and 27 Huch teaches all the subject matter of a method/switch of

writing input columns of the input data stream to a common buffer (see abstract and Fig.5 memory page and column 7 lines 44-45) according to a write pointer (see Fig.3 "FIRST READ WRITE POINTER"); and
in parallel with writing (See column 4 lines 41-45), reading from the common buffer to output columns of an output data stream according to a read pointer (see Fig.3 "FIRST READ WRITE POINTER"), the read pointer selecting, for each of the output columns, an input column from a limited portion of the buffer that contains a set of the input columns that are except of switching, comprising: receiving an input data stream carrying plural tributary payloads from an external input link, each of the plural tributary payloads . Although **Huch** teaches about generic data packet (see column 2 lines 39-42), **Huch** does not teach the special type of packet such as **tributary payload**.

However, **Upp** teaches receiving an input data stream carrying plural tributary payloads from an external input link, each of the plural tributary payloads (see abstract). Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to combine the teaching of **Upp** with teachings of **Huch** to design a high performance space-time switch. **Huch** memory architecture is a generic module that can be used in a switch. However, the tributary payload, which has a specific data format, can be modified to a generic data stream to be written to a memory module and read from the memory module. This is possible because the tributary payload can be decomposed into different types of tributary to address different traffic requirements. The motivation for this combination is the increasing demand for both memory size and read and write performance which are provided by the **Huch** memory architecture.

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For claims 2-6 and 15-19 Huch teaches all the subject matter of the method/switch, wherein the limited portion of the buffer depends on a corresponding location of the write pointer in the buffer, for each output column the corresponding location of the write pointer and the limited portion containing the set of input columns for reading being mutually exclusive (see column 4 lines 29-32). However, **Huch** does not teach about the type of payload (tributary); the method, wherein each of the plural tributary payloads is characterized by an arbitrary type; the method, wherein each of the plural tributary payloads is characterized by a type selected from the group consisting of **VT1.5, VT2, VT3, and VT4**; the method, wherein each of the plural tributary payloads is characterized by the same type; and the method, wherein the communication protocol is **SONET**. On the other **Upp** teaches tributary payload subject matter and its variations (see abstract “**SONET** formatted signal being disassembled into its virtual tributary (**VT**)” payload). **Upp** also teaches about **VT1.5, VT2, VT3, and VT4** types. (See Fig. 7 **VT1.5, VT2, VT3, and VT6, VT4** is reserved). **Upp** also teaches that **SONET** signals are composed of a number of **VTs**, which may be the same, or allowed mix of sizes (see column 2 lines 26-30). Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use tributary payload of **Upp** in the memory architecture of **Huch** to provide a space-time switch that caters to the **SONET** tributary payload. The **SONET** tributary payload is of standard format (see **Upp**’s Fig.1 for **SONET** payload format). The **SONET** payload can be dissembled into different tributary (ex. **VT1.5, VT2, VT3, VT4, VT6**). Therefore, it is possible by to disassemble the **SONET** payload based on a desired traffic. Once the **SONET** payload is decomposed into desired tributary, it can then be used in the

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memory architecture of **Huch**. The motivation for this combination is to respond to the increasing demand for both memory size and read and write performance, which are provided by the **Huch** memory architecture. Also, this combination allows meeting the variation of incoming and outgoing traffic payloads.

Allowable subject Matter

3. **Claims 7, 8, 9, 10, 11, 12, 13, 20, 21, 22, 23, 24, 25, and 26** are objected to as being dependent upon a rejected base claim, but would be allowable if written in dependent form including all of the limitations of the base claim any intervening claims.

Conclusion

4. Prior art made of record and not relied upon is considered pertinent to applicant's disclosure. **Takada et al. (US 7,075,938 B1), Bansal et al. (US 6,650,637 B1), Eom et al. (5,914,952), and Sailesh Kumar, Raja Venkatesh, Joji Philip, Sunil Shukla, "Ultra High Speed Packet Buffering using "parallel packet Buffer", Proceeding of IEEE International conference on Networking (ICN 2002), August 21 2002**

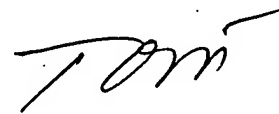
5. Any inquiry concerning this communication or earlier communications from examiner should be directed to David Oveissi whose telephone number is (571) 270-3127. Examiner can normally be reached on Monday to Friday 8:00 AM to 5:00 PM EST.

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If attempts to reach examiner by telephone are unsuccessful, examiner's supervisor, Dang Ton can be reached on (571) 272-3171. fax phone number for organization where this application or proceeding is assigned is 571-273-8300.

Information regarding status of an application may be obtained from Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

D.O



DANG T. TON
SUPERVISORY PATENT EXAMINER